

# Journal of the Royal Society of Arts

NO. 4969

FRIDAY, 20TH JANUARY, 1956

VOL. CIV

## FORTHCOMING MEETINGS

WEDNESDAY, 25TH JANUARY, at 2.30 p.m. FERNHURST LECTURE. '*Insect Physiology in Relation to Insecticides*', by V. B. Wigglesworth, C.B.E., M.D., F.R.S., Quick Professor of Biology, University of Cambridge. E. Holmes, M.Sc., Ph.D., Technical Director, Plant Protection, Ltd., will preside.

TUESDAY, 31ST JANUARY, at 5.15 p.m. COMMONWEALTH SECTION. '*Recent Developments in the Federation of Rhodesia and Nyasaland*', by Sir Gilbert Rennie, G.B.E., K.C.M.G., M.C., High Commissioner for the Federation of Rhodesia and Nyasaland, The Right Honble. Lord Reith, P.C., G.C.V.O., G.B.E., C.B., T.D., Chairman, Colonial Development Corporation, will preside. (Tea will be served from 4.30 p.m.)

WEDNESDAY, 1ST FEBRUARY, at 2.30 p.m. '*Designing for Television*', by F. H. K. Henrion, M.B.E., F.S.I.A. Sir Kenneth Clark, K.C.B., Chairman of the Arts Council of Great Britain and of the Independent Television Authority, will preside.

WEDNESDAY, 1ST FEBRUARY, at 6.30 p.m. DISCUSSION ON '*Recent Developments in Cinema Technique*'. Opening Speaker: Raymond Spottiswode. (See special notice published in the last issue of the *Journal*, but note that refreshments will be served from 5.45 p.m. and not 6 p.m.)

FRIDAY, 3RD FEBRUARY, at 7.30 p.m. FILM EVENING. (Full details published in the last issue of the *Journal*.) '*Figurehead*' (to be introduced by its producer, Mr. Allan Crick) and '*Ninety Degrees South*'.

WEDNESDAY, 8TH FEBRUARY, at 2.30 p.m. INAUGURAL FRED COOK MEMORIAL LECTURE. '*The Life and Work of Sir Joshua Reynolds, P.R.A.*', by Allan Gwynne-Jones, D.S.O., A.R.A. Professor A. E. Richardson, K.C.V.O., F.R.I.B.A., President, Royal Academy of Arts, will preside. (The lecture will be illustrated with lantern slides.)

TUESDAY, 14TH FEBRUARY, at 5.15 p.m. COMMONWEALTH SECTION. SIR GEORGE BIRDWOOD MEMORIAL LECTURE. '*The New India*', by Her Excellency Mrs. Vijaya Lakshmi Pandit, High Commissioner for India. The Right Honble. Lord Hailey, P.C., G.C.S.I., G.C.M.G., G.C.I.E., will preside.

N.B.—As it is expected that a large number of Fellows and their guests will wish to attend this meeting, admission will be by special ticket, application for which should be made to the Secretary of the Commonwealth Section not later than Tuesday, 31st January.

WEDNESDAY, 15TH FEBRUARY, at 2.30 p.m. '*Arithmetic of the Musical Scale*', by L. H. Bedford, O.B.E., M.A., B.Sc., M.I.E.E., of the English Electric Co., Ltd. W. Greenhouse Allt, Mus.D., Principal, Trinity College of Music, will preside. (The paper will be illustrated with pianoforte demonstrations.)

WEDNESDAY, 22ND FEBRUARY, at 2.30 p.m. '*The British Glasshouse Industry*', by W. F. Bewley, C.B.E., D.Sc., V.M.H., Director, Glasshouse Crops Research Institute. Sir Edward Salisbury, C.B.E., D.Sc., F.R.S., Director, Royal Botanic Gardens, Kew, will preside.

## 250TH ANNIVERSARY OF THE BIRTH OF BENJAMIN FRANKLIN

### PRESENTATION TO SIR WINSTON CHURCHILL

The Society was represented by the Chairman of Council and the Secretary at a memorable ceremony which took place on the 11th January at Benjamin Franklin House, 36 Craven Street, Charing Cross, W.C.2, the headquarters of the British Society for International Understanding. The Mayor of Philadelphia, Mr. Joseph Clark, had flown over specially in order to present to Sir Winston Churchill one of the two first Franklin Medals to be struck by the City of Philadelphia, and the presentation took place in the room used by Franklin as his parlour. The other bodies represented on this occasion were those, such as the Royal Society of Arts, with which Franklin was associated, and bodies like the British Society for International Understanding which are concerned with the strengthening of ties between Great Britain and America.

A reproduction of the medal, which is to be awarded periodically to honour those who have made distinguished contributions to international understanding and which was designed by Sir Jacob Epstein, is shown on page 206. The other medal awarded this year has been presented to Mrs. Eleanor Roosevelt.

The Congress of the United States also has struck a special medal in commemoration of the 250th anniversary of Franklin's birth, for award to the bodies with which Franklin was associated, of which there are six in this country. An account of its presentation to the Royal Society of Arts on Wednesday last, 18th January, will be published in the next issue of the *Journal*.

*ROYAL DESIGNERS FOR INDUSTRY*

The Annual Evening Reception of the Faculty of Royal Designers for Industry was held at the Society's House on Wednesday, 7th December, and the Faculty was honoured on this occasion by the presence of His Royal Highness The Duke of Edinburgh, who was attended by Lieut.-Commander Michael Parker. Among the other guests were Dr. R. W. Holland (Chairman of Council, Royal Society of Arts), The Right Honble. Peter Thorneycroft (President, Board of Trade) and Mrs. Thorneycroft; Mr. Misha Black (President, Society of Industrial Artists); Sir Alfred Bossom, Sir Ernest and Lady Goodale, Mr. and Mrs. F. A. Mercer; Sir Brian Robertson (Chairman, British Transport Commission) and Lady Robertson; Lord Rochdale (President, National Union of Manufacturers); Dr. W. J. Worboys (Chairman, Council of Industrial Design) and Mrs. Worboys; and the following members of the Faculty, with their ladies or escorts; Mr. Milner Gray (Master), Mr. Alvar Aalto (Hon. R.D.I.), Mr. Christian Barman, Mr. Reco Capey, Sir Hugh Casson, Mr. Pinin Farina (Hon. R.D.I.), Mr. Uffa Fox, Mr. Barnett Freedman, Mr. Laurent Giles, Professor R. Y. Goodden, Mr. Ashley Havinden, Miss Enid Marx, Sir Francis Meynell, Mr. Brian O'Rorke, Mr. E. C. Ottaway, Mr. Ernest Race, Sir Gordon Russell, Professor R. D. Russell, Dr. Barnes Wallis, Mr. J. W. Waterer, Miss Anna Zinkeisen; with Mr. K. W. Luckhurst (Secretary) and Mr. R. V. C. Cleveland-Stevens.

*MEETING OF COUNCIL*

A meeting of Council was held on Monday, 9th January, 1956. Present: Dr. R. W. Holland (in the Chair); Mrs. Mary Adams; Dr. W. Greenhouse Allt; Sir Alfred Bossom; Mr. Robin Darwin; Professor Sir Charles Dodds; Mr. John Gloag; Sir Ernest Goodale; Mr. Milner Gray; The Earl of Halsbury; Mr. A. C. Hartley; Mr. William Johnstone; Sir Harry Lindsay; Mr. F. A. Mercer; Mr. Oswald P. Milne; The Earl of Radnor; Professor A. E. Richardson; Mr. A. R. N. Roberts; Sir Harold Saunders; Sir Selwyn Selwyn-Clarke; Sir John Simonsen; and Sir Griffith Williams, with Mr. K. W. Luckhurst (Secretary), Mr. R. V. C. Cleveland-Stevens (Deputy Secretary) and Mr. David Lea (Assistant Secretary).

## PROFESSOR A. E. RICHARDSON

The Chairman offered the congratulations of the Council to Professor A. E. Richardson on his appointment as a Knight Commander of the Victorian Order.

## ELECTIONS

The following candidates were duly elected Fellows of the Society:

- Bilham, Mrs. Margaret Ann, Bordon, Hants.
- Birks, Charles George Napier, Buenos Aires, Argentine.
- Brake, Sir Francis Joseph Edwin, M.I.E.E., East Horsley, Surrey.
- Bond, Brian Owen, Leura, N.S.W., Australia.

Cisler, Walker Lee, M.E., O.B.E., Grosse Pointe Park, Michigan, U.S.A.  
Farmer, Sidney Gerard, Kidderminster, Worcs.  
Geiger, Lawrance, Southall, Middx.  
Gibson-Hill, Carl Alexander, M.A., M.R.C.S., L.R.C.P., Singapore.  
Guerlac, Professor Henry E., M.S., Ph.D., Ithaca, New York, U.S.A.  
Hahn, Paul, Toronto, Ontario, Canada.  
Haines, John Bottnell Rodney, London.  
Hemraj, Gulamhusiein Dhanji, Mombasa, Kenya.  
Keil, John Michael Maclean, Broadway, Worcs.  
Meredith, Donald Garmon, Cardiff, Glams.  
Messick, Benjamin N., Long Beach, California, U.S.A.  
Moerdowo, Dr. Raden, London.  
Mytum, Ernest, M.A., A.R.I.C., Coventry, Warwicks.  
Phillips, Miss Margaret McDonald, New York City, U.S.A.  
Piper, Keith Llewellyn, B.Arch., A.R.I.B.A., Auckland, New Zealand.  
Reiss, Hans Frederick, London.  
Richardson, John Gregory, A.M.I.E.E., Lagos, Nigeria.  
Richey, Wing Commander Paul Henry Mills, D.F.C., London.  
Rowland, Mrs. Joyce Mary, London.  
Rowland, William Barry, London.  
Rushton, Basil James, London.  
Selden, Peter Charles, Hemel Hempstead, Herts.  
Shayle, Alan, London.  
Sholu, Mrs. Grace Modupe, Birmingham.  
Smith, Lloyd Sydney, Port of Spain, Trinidad, B.W.I.  
Stevenson, Bruce Collingwood Maltby, M.A., Newcastle-upon-Tyne.  
Woodward, John William, Gravesend, Kent.  
Viney, Nigel Merriam, B.A., London.  
Young, Geoffrey G., London.  
Zichy, Countess Maria, New York City, U.S.A.

## H.R.H. THE PRESIDENT

The Council received with great pleasure an intimation that His Royal Highness the President had accepted the Chairman's invitation to take luncheon with them at the Society's House on Wednesday, 28th March.

## SOCIETY'S LIABILITY FOR RATES

It was decided to take advice on the Society's position with regard to rates.

## BOARDS OF ARCHITECTURAL EDUCATION

Mr. Oswald P. Milne and Sir Alfred Bossom were reappointed as the Society's representatives on the Boards of Architectural Education of the Architects' Registration Council and the Royal Institute of British Architects respectively.

## OTHER BUSINESS

A quantity of financial and other business was transacted.

# SCIENTIFIC ASPECTS OF THE DETECTION OF CRIME

*A paper by*

*L. C. NICKOLLS, M.SC., A.R.C.S., D.I.C., F.R.I.C.,*

*Director, Metropolitan Police Laboratory, read to  
the Society on Wednesday, 30th November, 1955,  
with Sir William Charles Crocker, M.C., Past-  
President of the Law Society, in the Chair*

THE CHAIRMAN: We are to have the privilege of hearing Mr. L. C. Nickolls lecture on 'Scientific Aspects of the Detection of Crime'. If you look at your invitation card you must realize that Mr. Nickolls is a very highly qualified scientist. When I first had the pleasure of making his acquaintance many years ago he was employed in the Government Chemists' Department, and even at that time he was engaged in the investigation of matters which infringed the law. He then went to the Hendon Forensic Laboratory established by Lord Trenchard and, after some years, liking the life, he went to Wakefield and devoted himself wholeheartedly to the pursuit of crime! He had 12 years in Yorkshire. He then came to New Scotland Yard where he is in charge of what is probably the best Forensic Laboratory in the world. He has the most fascinating life.

*The following paper, which was illustrated with lantern slides, was then read:*

## THE PAPER

In the age-old struggle between those who abide by the law and those who pursue their own ends irrespective of legal restraints, the skilful wrongdoer has always had the advantage of initiative and concealment. Law-abiding people have been forced, from very early times, to appoint officials especially for the purpose of protecting the interests of the community from the activities of their criminally-minded members. From the appointment of these officials there has been evolved the world-wide system of police forces of which the British Police system was one of the first and is, in my humble opinion, the best in the world.

Early experience showed that accusation, imprisonment and even conviction without fair trial was always liable to arise in a community torn by fear, ignorance, or strong conflicting beliefs. Those of you who have read Sir Patrick Hastings' *Famous and Infamous Trials*, will realize how imperfect our criminal justice was in olden days and even in comparatively recent years. The present system of law, as fair as reasoning man can devise, maintains the rights of an accused person and ensures that conviction of a criminal requires the presentation by the prosecution to the Courts of Law of sufficient facts to convince these courts of the guilt of the accused, the facts being sworn to by witnesses whose testimony and credibility are subjected to suitable searching examination.

In comparatively sparsely populated communities, living a simple life, detection of crime was also comparatively simple, methods of committing crime being limited, possible suspects few in number and alibis easy to check. The intensely congested populations of modern industrial civilizations enable a criminal to approach undetected a scene of a crime, to commit the crime and, merging himself imperceptibly with the crowd, to disappear without leaving an obvious trace. In addition, in modern life, methods of committing crime have become increasingly complex and difficult of detection.

In an age which is based on scientific achievement, the combating of crime must increasingly make use of scientific methods of detection. It is, indeed, fortunate that the same scientific developments which have assisted the criminals have at the same time produced the instruments and methods to assist in their ultimate arrest and conviction. Accordingly, all civilized communities have now established laboratories to assist in maintaining order. In this country, these laboratories, the Forensic Science Laboratories, are staffed by trained scientists appointed by the Civil Service Commission to act as independent experts, whose task is to examine all forms of material derived from crime and report objectively on them first to the police forces concerned and then, if necessary, to the Courts of Law. Although the range of work, which I am going to describe, may appear to be extremely wide in scope, in fact it is limited by the number of types of crime in the calendar and the habit of criminals of utilizing similar methods of committing crime. The requirements of a forensic scientist are (1) a knowledge of legal method to enable him to assess the value, in a Court of Law, of his findings, (2) a scientific training to enable him to seek, adapt, or improve methods of obtaining information of value to the Courts, (3) an intimate knowledge of the common scientific 'clues' found recurring in crime and the standard methods of detecting them, and (4) the ability to explain the scientific facts clearly, impartially and firmly to the Court. All these requirements are not necessarily in the possession of even the greatest scientist and, as may be surmised, it is not easy to find all the desirable attributes in one person. It has been found in practice in this country that the requirements are best met by selecting a candidate of suitable scientific attainment and educating him by giving him long experience in the actual work of a forensic laboratory. During the course of this training, the expert learns the difficult task of giving what are often complicated scientific facts to the Court and presenting the salient points in a form readily understandable to the lay mind. This is particularly important since, however excellent the scientific work may have been and however wide the experience used in detecting the possibility of scientific action, the evidence is useless if it is not completely understood. In practice, the work of such a laboratory groups itself into four main divisions which operate as partly independent though closely associated sections, a few of the types of work of which are as follows:

*Biological laboratory:* In this laboratory are examined all materials which are derived from living organisms and which normally have an organic structure. Cases involving such material form an appreciable proportion of the total

examined. The main exhibit of interest to the public in such cases is bloodstaining, since bloodstains are usually associated with serious crime and often with crimes having a sensational appeal to the public.

The value, as evidence, of a bloodstain is that it is a physical fact which has to be explained satisfactorily. In *R. v. Livesey*, the accused was charged with murdering his mother-in-law in South London. He was picked up by the Police at Ramsgate five days after the murder and was found to be wearing only a shirt, just bought, a pair of shoes, a mackintosh, and a wrist watch. He explained the absence of the missing garments by saying that he had been bathing and someone had stolen his clothes. Examination of the shoes, mackintosh and wristwatch revealed the presence of staining with human blood. It was pointed out by the Judge at the trial that if the missing clothes had revealed no bloodstaining it would have been a strong point for the defendant. If they had been stained the reverse would be the case. There is, of course, from the examination of all the remaining articles, a strong presumption that the lost garments must have been bloodstained and the accused was convicted. It may be remembered that in *R. v. Whiteway* (the Towpath murders) a bloodstained shoe played a prominent part in the trial. The amount of blood present after five-weeks' wear in very rainy weather was infinitesimal but it was identified as human blood and it had to be explained. In *R. v. Manneh*, the accused was charged with murder in which a wristwatch was stolen. The murderer cut his hand accidentally in committing the crime. Examination of the wristwatch revealed human bloodstaining. This was carefully differentiated and the blood inside the case of the watch was shown to have the same blood group as the deceased man, while the blood outside the case had the blood group of the accused.

In the examination of bloodstains, any expert can identify comparatively large amounts of blood but it requires the years of experience of a forensic scientist, constantly engaged in such work, to identify many of the trace amounts which are often all that are present.

The distribution of the bloodstaining is also of importance. By experience the expert learns to recognize the patterns of bloodstaining produced by different types of assault. One peculiarity of bloodstaining is that the amount of staining on a murderer may often be infinitesimal compared with that at the scene of a crime. In *R. v. Davies*, the Clapham Common murder, a quick stabbing with a knife left practically no bloodstaining on the assailant. In *R. v. Lumelino*, although the murdered man was battered repeatedly on the head with a hammer, the staining of the accused consisted solely of a few characteristic minute spatters. In such cases the blood spatters go over the head of the assailant.

Of course, the scientist does not always find bloodstains because the Police suggest they are there. In a case in which the floor of a hut appeared to be bloodstained, blood tests were negative. Material was removed for examination in the laboratory, where the supposed bloodstains were shown to be a growth of *pleurococcus haematococcus*, a blood-red gelatinous alga.

Far commoner than offences against the person, however, are offences against property. We are surrounded on all sides, in our daily life, with organic material

in the form of fibres and fabrics of an increasingly varied nature, both in origin and in colour, of vegetation, of dust and of foodstuffs. How often have we looked ruefully at our hands or clothes after some adventure because they have picked up such a large amount of adventitious material. This material will convict an offender. On one occasion a man was suspected of breaking into a house and stealing jewellery and other valuables. A search of his house failed to reveal any of the stolen property but his clothing and so on was scientifically examined. His finger nails were found to be contaminated with a comparatively large amount of wheat starch. Armed with this information, the police found the stolen property hidden at the bottom of the flour bin. Finger-nail scrapings also played a part in the Chesney murders. You may remember that Ronald Chesney was suspected of murdering his wife and mother-in-law. The wife was found drowned in a bath, fully clothed including a cyclamen cardigan. Chesney committed suicide in Germany. Examination of Chesney's finger nails revealed a number of cyclamen-pink wool fibres, identical with the fibres of Mrs. Chesney's cardigan even to the frayed ends of the fibres caused by washing and age.

Of recent years, wood fragments have become front-page news. In the epidemic of safe robberies, safes are blown open and the ballast, or filling, between the inner and outer shells is scattered. This filling in old safes is largely sawdust of a most random composition. Such sawdust of approximately one millimetre cube can be identified with certainty and as many as ten or more woods have been identified in a single safe ballast. On occasion even wood flour has been identified, a remarkable and difficult experimental undertaking.

*Chemical laboratory:* In this laboratory are made all the many chemical analyses which arise in crime. It is impossible even to outline the scope of these analyses but mention may be made of a few examples. Firstly poisons: people are always administering poisons to each other or imagining they are being poisoned—and sometimes they are right. We identify the poison, find out how much, and describe the effect and from this it can be decided whether an offence has been committed. A woman administered a 'home-perm' material to her husband to keep him at home whilst she went out with an escort. She was convicted and sentenced for this offence and the trial achieved some publicity. In the next few months we received several other cases of the administration of 'home-perm' materials. Unfortunately, or fortunately, the culprits had used the wrong 'home-perm' and it had no ill effect.

*R. v. Conroy* is a case illustrating the value of the scientist in this type of case. A 13 year-old boy was found lying dead in bed in rather peculiar circumstances. At autopsy it was evident that he had recently had a severe epileptic fit which might have been the cause of death but the pathologist examined a sample of blood and found carbon monoxide. We received a check sample and confirmed the presence of carbon monoxide. In these circumstances, certain organs were examined and a lethal dose of phemitone, a barbiturate, was identified in them. The boy's mother was charged with his murder and found guilty but insane.

Dangerous drugs, medicines and many other manufactured chemicals are also examined in connection with many offences. Such manufactured chemicals are,

for example, found in cases of larceny. Two thieves stole a number of bronze filter plates from a battery factory. On examination, black stains on their clothes and in their car were shown to be almost pure hydrated manganese dioxide, a somewhat rare chemical which was filtered on these plates. They were convicted.

The identification of inflammable liquids or other materials has proved valuable evidence in cases of arson. Even in the absence of such evidence, the expert is of considerable value in using scientific knowledge and experience to test the information available to the police. In the case of a fire which occurred in a garage on a Sunday afternoon, for instance, two people had been in the garage during the afternoon, although one appeared to have been at a milk bar when the fire occurred. The police suspected that something irregular had happened, but were unable, from the information, to decide what it had been. When the scientist examined the premises and the stories of the two men he found firstly, that the fire had started at the back of a car. A tin was unearthed from the *débris* here and a piece of rubber tubing, burnt at one end, was found in it. A similar piece was recovered from the petrol tank of the car. He found, secondly, that the story of the man in the milk bar was scientifically inconsistent with the facts. The man made a statement to the police admitting siphoning petrol from the car in order to sell it. Unfortunately, it overflowed and caught fire, whereupon he rushed to the milk bar to create an alibi. The fire caused £15,000 worth of damage. The accused was fined £5 for stealing petrol.

*Physical laboratory:* In this department are examined the physical properties of substances recovered from crime. When glass is broken minute splinters are thrown into the air. These fall on the surrounding surfaces which include the clothing of an offender. We identify the glass by its physical properties, particularly its refractive index and specific gravity.

By X-ray diffraction, minute amounts of crystalline material can be identified. In *R. v. Ford*, where small quantities of *cantharidin* were administered to two young ladies with fatal results, *cantharidin* was identified with certainty by this means.

Minute fragments of paint adhering to a criminal or his property can be identified by the layer structure, while the chemical composition of these fragments is determined on a spectrograph. Such fragments are found, for example, in cases of house-breaking, safebreaking and motor offences.

*General laboratory:* In this laboratory we deal essentially with those examinations which are associated with photographic techniques or demonstrations: the comparisons of boot and shoe impressions, marks left by breaking instruments, the examination of tooth impressions, bullets and cartridge cases, the examination of suspect documents. All these may involve some form of photographic reproduction.

While it is impossible in a short space of time to cover all the activities of a forensic science laboratory, enough has been said, I think, to indicate the wide sweep of the forensic scientist's net. To achieve his results the forensic scientist uses three weapons.

Firstly, scientific knowledge. This can be used alone to test the facts presented by the Police or statements made by a witness. For example, a suspect whose

garage had caught fire stated that he had accidentally dropped a blow lamp into a barrel of paraffin and it blew up thus setting fire to the building. From scientific knowledge this can be stated to be wrong. The blow lamp is extinguished and no fire results. Such information can be invaluable to the Police and the Courts. On another occasion certain individuals were alleged to have conspired to administer drugs to greyhounds with the intention of affecting their running. A large number of drugs were recovered and others were mentioned in conversation. It was essential to the prosecution that the action of these very modern drugs should be understood by the Police in their investigation and by the Court in their consideration of the evidence.

Secondly, experiment. The forensic scientist must always test all his conclusions wherever possible. In the examination of a crime many circumstances are found which can only be understood as a result of experiment. In the case of *R. v. Ford* already mentioned it was established by X-ray diffraction that *cantharidin* had been used in the crime. The amounts recovered from the various materials were too small and too impure to be identified by X-ray diffraction. *Cantharidin* is a substance which is singularly devoid of characteristic reactions. Accordingly experiments were undertaken to determine it by its only distinctive feature—its ability to blister the skin. A standard blister was produced to blister the skin. A standard blister was produced on the arm of a volunteer by a known amount of *cantharidin*. Various amounts of extracts of materials were tested to produce similar blisters and from this the concentrations of *cantharidin* in them was ascertained.

In cases involving shooting with firearms patterns are produced on the clothing or bodies of the victims. To discover the distance from which the weapon was fired, a matter of considerable interest to the Court, experiments must be made with the crime weapon and cartridges in the possession of the accused in order to obtain similar patterns and thence answer the question.

Finally, observation. The forensic scientist utilizes his five senses and, in fact, trains them very considerably to assist him in his job. These senses, however acute, are not enough and the scientist makes use of many sensory aids. Some of these are as follows: The microscope needs no explanation. The use of both low-power and high-power microscopy constantly reveals information. For example, a wire around a stolen carton had been cut to remove the contents. Low-power microscopy showed scratches on the cut ends of the wire caused by the cutting instrument. Comparison of these with similar cuts made with a suspect pair of pliers afforded irrefutable proof that both cuts had been made with the same instrument.

Ultra-violet light is an extension of vision beyond the blue end of the spectrum. It provides two effects of considerable value to the scientist. Firstly, two colours which appear identical to the eye may be entirely distinct to ultra violet light. Secondly, ultra-violet light causes many substances to fluoresce or glow. One use of these phenomena is in forgery. A forger produces a result most satisfactory to look at. Its ultra-violet appearance is amusing to the scientist, although very disturbing to the forger.

Infra-red light is an extension of vision beyond the red end of the spectrum. Infra red has two effects similar to those of ultra violet, that is, the colour effect and its power of penetration for short distances through opaque objects. The effects of infra red can only be observed by photographic means. Two examples of the use of infra red are, firstly, burnt documents to illustrate the colour effect, since the blackness of charring is not black to infra-red light but is white, so that the writing of such a burnt document shows up as black on a white background and is perfectly intelligible and, secondly, mechanical erasures, as, for example, indiarubber erasures, where the infra red reveals the particles of writing material which are invisible to the naked eye because they have become embedded by the eraser in the fibres of the paper.

Various photographic techniques are employed. By prolonged exposure and the use of colour filters and photographic plates of varying characteristics it is possible to reveal faint or invisible impressions which the eye cannot distinguish. In addition, by using different types of lighting further phenomena can be distinguished by the photographic plate.

X-rays are utilized because of their powers to penetrate solid objects. It may be remembered that X-rays were used to reveal the underlying paintings on the Van Meegeran forgeries. For the last twenty years or more I have been using the same procedure for detecting similar forgeries in ordinary crime. For example, a man steals a motor cycle. He alters its number plates to alter its identity. He does this by painting out the old numbers and painting in the new ones. X-ray examination reveals the old numbers in their entirety and the motor cycle is shown to be the stolen one. This almost invariably leads to the conviction of the thief.

Time does not allow any further illustration of the work of the forensic scientist. What I have been able to describe to you is a very small cross-section of the activities of my laboratory at New Scotland Yard. I have endeavoured nevertheless to show you that any problem of scientific examination or comment arising in police work can be adequately dealt with, and information supplied which is of concrete value to the forces of law and order.

If you remember what I said at the beginning of this paper concerning the increasing emphasis that has been placed upon proof in the Courts of Law in more recent years, you will see that, in the illustrations I have given, emphasis has been laid on the use of scientific method to obtain proof. I am satisfied if you agree that the evidence I have shown you is satisfying and convincing. I hope, in addition, I have shown that the attitude of the forensic scientist is that of a seeker after truth and a seeker of fact. That we so often give evidence for the prosecution is not a result of any deviation from impartiality on our part, but is to the credit of the police, who very rarely suspect the wrong man.

#### DISCUSSION

MR. T. W. PADDON: I was particularly fascinated by Mr. Nickolls' reference to the identification of particles of wood; it has been my interest for very many years. Can Mr. Nickolls tell us a little more about the methods of preparing his sections?

I notice that each of those specimens shown was beautifully orientated. That is a very difficult thing to do with very small particles. Wood is not the easiest of materials to imbed when handling very small particles, and I should very much like to know how one can handle particles of the size we saw.

THE LECTURER: Those particles were, in fact, particles from a safe ballast. We orientate them, of course, by the usual methods. That is to say, the particle is normally found cut with a longitudinal section downwards. We cut across the top to obtain the transverse section and get an idea of how it lies. This is of no use to us, as it is too small; we merely want to know its direction. We then cut the particle and embed it in gum. We cut it on a sledge microtome and we take our tiny sections from that. We do not always get them quite as good as that, I must admit! Once having cut them in gum we then identify them with the use of the Forest Research Association's key in the standard manner.

MR. PADDON: What type of gum was used?

THE LECTURER: Stationery Office gum, frozen hard on a sledge microtome.

MR. A. A. POLLARD, J.P.: Has Mr. Nickolls personal experience of the value of analysis of alcohol in samples of urine, applied in cases of driving drunkenness?

THE LECTURER: Yes, I have.

MR. POLLARD: Can the lecturer tell us if he has any strong views as to the accuracy and certainty of the results? Is it possible that these can be affected according to whether a man is a life drinker or is an habitual heavy drinker? If he was alleged to have had a quantity of drink at a certain time and then some time after, much closer to the time of taking the sample, he had another drink, would that affect it a great deal?

THE LECTURER: It would take an hour to answer that question. Blood and urine alcohols are satisfactory as analytical procedures, that is to say I have on many occasions examined a sample of blood, a sample of urine, and found it to contain a certain amount of alcohol, and the figure was accurate. The figure can be correlated approximately to the quantity of drink which has been consumed. We normally do this for the purposes of the court. Of course, if I say there are 275 milligrammes of alcohol per hundred millilitres it does not mean much to the average magistrate, or even the average lawyer; but for me and possibly for the pathologist, it is quite good enough, and we nod our heads wisely, meaning that the man is under the influence of drink to some extent. I convert it into pints of beer, fluid ounces of spirits, for the benefit of the court. But remember, it is the actual figure that is important and not the conversion.

As regards the effect of habituation, it is nowhere near so much as the habitués would wish it could be. The habitué is accustomed to, he has greater experience in concealing the affects of, alcohol than the novice, but he is quite well affected by it. He also, of course, does not absorb alcohol so fast. As a result he does not get value for money for his alcohol, in so far as he does not absorb it, but he gets a very good value for what he does in fact absorb. Whether a person is a novice or a habitué, if he has got over two hundred milligrammes in his urine he is under the influence of drink. I have no doubt about that at all. The alcohol test is, in my opinion, a highly desirable technique, and it is in the interests of the community to utilize such a test to assist in properly convicting those who drive motor vehicles while under the influence of alcohol.

MR. P. H. B. ALLSOP: Is it possible to distinguish between the gases from cars and alcohol in the urine? I believe that there was a recent case in which the matter was raised.

THE LECTURER: To a large extent exhaust gases in cars is a good defence, but not good science. I have never been able to detect them in cars. I have had this defence

raised, and have tried out the cars under scientific conditions, but have never been able to detect any significant quantity of carbon monoxide circulating in the car. It is, I think, dynamically wrong.

As far as the question of being able to test this is concerned, of course, carbon monoxide does not interfere in the least with an alcohol determination, and an alcohol determination does not interfere in the least with a carbon monoxide determination. Therefore an examination of a urine would tell you at once whether there is alcohol present or not. It is the perfect answer and will prevent the defence being put forward unless it is a true one. If, of course, it is true, then it should be put forward.

MR. R. C. M. JENKINS: Has Mr. Nickolls anybody at his laboratory to deal with comparisons of handwriting and typescript or does that go to another laboratory, which I used to know, for such work? Dr. Harrison used to be an expert and I do not know if there is anyone else who does the work now.

THE LECTURER: Originally all the laboratories used to do their own handwriting and typewriting examination, but the work became rather heavy and it was decided that in view of the fact that personal expert opinion played such a large part in handwriting examination it would be better if all the experience were consolidated in one laboratory. So Dr. Harrison of Cardiff does all the work of this nature in the forensic science scheme.

MR. F. ROBERTS: I wonder if Mr. Nickolls would tell us what the truth is behind such things as truth drugs and lie detectors and also if he has any ideas for the use of electronics in the detection of crime?

THE LECTURER: As far as truth drugs and lie detectors are concerned I think that they are fundamentally against the principles of British justice. It is like putting anybody asleep deliberately, with the intention of getting a statement out of him. It would not, I feel, be regarded as legitimate in British justice. As far as the lie detector is concerned, again I think it is not at the present moment regarded as permissible. I am very strongly against both of them, particularly as I do not think that the lie detector is one hundred per cent accurate. The minute that you say that a method is not accurate, it is impossible to rely upon any particular answer, given in any particular case, as being correct. It may be the one answer that is incorrect, and therefore it has no value in my opinion. The Americans advocate it very strongly, but I think that they may alter their opinion in due course.

I cannot afford to use electronics at all; the instruments cost too much. I once, not long ago, tried to obtain a supersonic apparatus for a particular operation. I could not borrow one, and as the price was prohibitive I did not use the method.

MR. J. H. SHELTON: In view of the large number of barbiturates and their different melting points, can the lecturer tell us what methods are adopted in his laboratories to identify them ultimately? Does he use mixed melting point examinations or rely entirely upon chemical reaction?

THE LECTURER: The primary test of course is the mixed melting point. If we can get enough material, and we can purify it, we do a mixed melting point test, as that is the perfect positive test. We also do the X-ray defraction pattern. We commonly employ X-ray defraction and only quite recently I had an interesting case which you might have seen reported, which came from Gosport where I recovered seconal. That case was of sufficient importance to me to lead me, not only to do the melting points, but also to use X-ray defraction, chromatography, and ultra-violet absorption. In fact, I did everything that could possibly be done. I would not rely solely on a colour test or a crystal test. They are not one hundred per cent certain.

MR. ERIC WILLIAMS: I should imagine that the testings of older inks are matters which fall to Mr. Nickolls for examination from the chemical point of view. Now that the plague of the ball-point pen has descended upon us, I should be interested to know whether he has carried out any experiments with those inks and with what success?

THE LECTURER: A ball-point pen is a plague. I object to it scientifically very strongly. The ink used is a most abnoxious material, because it does not behave as nicely as the old-fashioned inks we are used to. Nevertheless, we can do something with ball-point inks. A gentleman was defrauding his bookmaker by altering his betting slips with a ball-point pen. We were able to convict him, and he got three or four years' imprisonment as a result. The ball-point pen came up very satisfactorily in that particular case.

As for identifying them, the latest method which we have found of some use is chromatography. Most of these inks are very suitable for chromatography, as is another very bad ink—the plain dye ink. They leave no residues at all like the old iron-gall inks used to. Nevertheless, chromatography is very fascinating indeed. We can differentiate inks and say that one is not the same as another, however much it may look like it, because its chromatograph is different. We are not in quite such a bad position as we used to be.

MR. WILLIAMS: What I am interested in for example is the determination of age. With certain well-known limitations, one could say with the older inks that an ink is either a year old or it is ten years old. We know that the ball-point pen has been with us for about this time. Can it now be said that this difference in age can now be determined?

THE LECTURER: I have never had to answer that question objectively; it would not be easy. In fact, I cannot tell you a solution to it at all, I should have to start off and try to work out something *ad hoc*.

DR. STANLEY GOODING: The lecturer showed us a shoe on which there was a blood stain and said that he examined it after six weeks and the blood was largely in the stitching under the welt. Would he, at the end of six weeks, be able to say that that was human blood and not the blood of an animal?

THE LECTURER: Yes. On that particular shoe I obtained a positive human precipitin test. The age is comparatively immaterial, only comparatively, of course, for doing serological tests. Also, providing you have enough blood, which of course I had not in that case, it is suitable for grouping too. There are a number of ways of denaturing blood stains, but ordinarily age is not one of them. I have got human precipitin tests to work satisfactorily on blood, and I have grouped blood, which had been many years old. Age alone does not interfere in the least.

THE CHAIRMAN: You have shown by your applause how much you have appreciated Mr. Nickolls' lecture and I think you must share my view that, in fact, he has material for many dozens of lectures. If I had any adverse criticism to offer it would be that he has tried to compress too much into the very short time at his disposal. He has given us all some extremely useful tips and he has himself indicated that we cannot be too careful. The difference between Mr. Nickolls and the great detectives of fiction is, of course, that he is alive and almost every day is tackling real life problems such as no Conan Doyle or Agatha Christie could evolve out of the imagination. A most fascinating life.

I formally propose a hearty vote of thanks to the lecturer.

*The vote of thanks to the lecturer was carried with acclamation; and another having been accorded to the Chairman, the meeting then ended.*

# AN ACCOUNT OF THE RECENT COMMONWEALTH TOUR

*A paper by*

*THE RIGHT HONBLE. THE EARL OF HOME, P.C.,*

*Secretary of State for Commonwealth Relations,  
read to a joint meeting of the Commonwealth Section  
of the Society, the East India Association and the  
Pakistan Society on Thursday, 24th November, 1955,  
with the Right Honble. Sir Patrick Spens, K.B.E.,  
Q.C., M.P., President of the East India Association,  
in the Chair*

THE CHAIRMAN: This is a very great occasion for the three Societies, the East India Association, the Pakistan Society and the Royal Society of Arts, and it is a very great honour to me to find myself in the chair at this combined meeting. My task, of course, is a very simple one. It is to introduce to you all, if you do not know him, Lord Home.

Lord Home, as you know, is the Secretary of State for Commonwealth Relations, but to some of us who have known him for a very long time, he is a great deal more. Young as he looks, and young as he is, getting younger every year, he is, in fact, an older Member of Parliament than I am. He got into the House of Commons in 1931 and I did not get in until 1933! In those years we knew him as Lord Dunglass and he started his career almost at once by becoming Parliamentary Private Secretary to Mr. Neville Chamberlain. During the years he has gone up through a number of different offices. I remember him as Under-Secretary of State for Foreign Affairs and of course we all remember him much more as Minister of State in the Scottish Office. Finally he has attained that office which is, in my view, of tremendous importance, not only to the British Commonwealth but to the whole world.

I am old-fashioned enough to believe that everything for which the Commonwealth stands means a tremendous lot for liberty and civilization throughout the world, and this intangible Commonwealth of ours can only be kept at its full strength by our Secretary of State making himself acquainted with as much of it as he possibly can, and with as many other people who are running it as it is possible for him to do.

It is a wonderful thing for us to have Lord Home as our Secretary of State and I know perfectly well that everything that can be done by him to draw closer together all the different nations of the Commonwealth will be done, and he has started off by a most remarkable effort, of which I ask him to tell us.

*The following paper was then read:*

## THE PAPER

No politician can afford to have very much of his past revealed and therefore I thank the Chairman, in the beginning, for revealing only that portion of mine which is comparatively respectable! But I have been charged by the Prime Minister with an office which is immensely important and in the very first days of it I decided

that such an office could not properly be carried through from one's desk in Whitehall. I decided that the more that the Secretary of State was out in the field in the Commonwealth the better it would be. Because, the Chairman has in his very short opening remarks said something which is very true. He used the phrase 'the intangible Commonwealth', and, of course, there are now no formal bonds between us.

It is worth while asking ourselves what it is, in the absence of any legal ties or formal bonds, which holds all these countries together, countries with different histories, different customs, different habits, and different religions, and inevitably of different outlook on matters of common concern. I think if I had to give the three main factors which hold the Commonwealth together, they would be these: first of all, a belief in a way of life—a way of life which insists upon the observance of a common law interpreted by impartial justice; a way of life which insists, too, upon the freedom of the individual, upon the individual's rights and upon tolerance. And I found everywhere, in all the countries I visited, a passionate belief in what we may call the British way of life, which does insist upon the rights of the individual to common law and impartial justice.

And secondly, I found a belief in all the countries I visited that, in this modern world, even the strongest country, alone, is weak and ineffective, and that there is strength in association and unity. All that is true, whether it is in the field of physical security, the military field, or in the field of economics. But when one has said all that, when we admit that a belief in a common way of life holds us together, when we have said that there is strength in association both in the military and in the economic field, nevertheless these things alone will not hold us, and I am old-fashioned enough to believe, as our Chairman said, that no great organization can hold together, least of all one of the complexity of the British Commonwealth, unless it is cemented by continuous personal contacts.

Our usefulness to each other within the Commonwealth will depend upon how far we understand each other's needs and how accurately each member of the Commonwealth is interpreted to each other. Let me say again, that everywhere I found a great desire among the different countries to know what was happening in the countries of the other members of the Commonwealth, and a passionate desire to be told what was happening in the United Kingdom, because all these countries—it is not arrogant to say so—want to hear that the United Kingdom is physically strong, economically strong, able to be a leading partner in the Commonwealth and to take a decisive interest in world affairs. That was universally felt wherever I went. So I believe that we should maintain with each other the most intimate relations, and this is best done by personal contacts.

My journey was one among many undertaken by Ministers of the Crown, and the more Ministers can exchange visits between the different Commonwealth countries the better it will be, the better we shall understand and co-ordinate policy and the more efficient will the conduct of policy be. But I suggest that this field of politics, economics and finance is not the only one in which there should be the exchange of visits. There is the opportunity for people in many, many

walks of life—in commerce, in the professions, in the arts, and in sport—to interchange visits and the more of these that can be arranged the better.

I saw many examples of Commonwealth unity and the common outlook of Commonwealth people during this tour, but I think the occasion which brought it home to me most effectively was at a cricket match that I saw in Lahore between New Zealand and Pakistan. It was one of those occasions when Pakistan had to get something like 116 runs in 116 minutes. It was a very exciting finish. There was an enormous crowd and the reaction of the players and the crowd to that tense situation was exactly as it would have been at Lord's or at Melbourne or any other great cricket ground in the British Commonwealth. It really was an extraordinarily impressive scene to see an identical reaction from people who, after all, have a very different history and very different habits and customs from our own.

The main part of this tour of mine was to New Zealand and to Australia. This evening I want to talk to you mostly about Ceylon, India and Pakistan and of my inevitably superficial impressions, because I could not be there for very long. But I must say a word to you about New Zealand and Australia and show you the bridge which exists between them and the Asian Commonwealth countries. I do not know how many of you in this audience have been to New Zealand, but you cannot be there for more than a week or so without realizing that it is naturally one of the richest and most fertile countries in the world. Grass grows there for 11 months of the year. The New Zealand farmers are industrious, and not only industrious, they are up to date. One of the commonest sights in New Zealand on this incomparable pasture land is to see it being fertilized from the air by little aeroplanes. You will see them flying about everywhere like butterflies, applying super-phosphates and any other elements that are lacking to the soil. We, and the whole world, can look forward to an immensely increased output from the New Zealand soil of mutton, of wool, of milk and of meat. Indeed there would seem to be very little limit, apart from the size of their country, to the increase which they can achieve.

They have their troubles—there is a shortage of labour and there is a shortage of materials, and costs are high—but, nevertheless, so industrious a people are they, so assured are they of a happy and a prosperous future, that one feels that in New Zealand the Commonwealth has not only one of its most fortunate assets but also one of the most loyal and most helpful members of the Commonwealth.

From New Zealand, with its incomparable pastures, with its infinite possibilities of turning these natural assets to commercial advantage, I went on to Australia. This is a country, too, which has enormous possibilities agriculturally for the future. I saw some of their great irrigation schemes where they are literally turning the rivers back on their course, taking them, instead of their direct way into the sea, the long way round through arid country so as to fertilize it for increased production. I saw also the existing pasture land, which they are treating in much the same way as the New Zealanders are treating theirs. And from these increased lands, which they are going to bring into production by irrigation and by the application of modern scientific methods, you will find that

Australia, should it wish to do so, can increase its crops of wool, of beef, of sugar and of wheat, many times.

But they are bent on doing much more than that. In this country we sometimes, I think, feel that Australia should remain primarily a producing country, content to buy British exports and manufactured goods. I have no doubt that there will always be a large market in Australia for British manufactured goods. But the Australians are bent on industrializing Australia. Let nobody have any doubts about that. They are making great progress in doing so. They are basing an efficient steel industry, for instance, on prodigious quantities of raw and easily accessible coal, and they have many industries which they are going to develop in a big way until Australia is not only an agricultural, but an industrial country. They are going to have their difficulties. They are moving to-day at such a pace, industrially, that they are putting a great strain upon their labour and upon their materials. The consequences are that costs in Australia are very high, and that the import bill is rising. The process of rapid industrialization is therefore going to mean that Australia is likely to balance precariously, as long as she pursues this policy, on the edge of inflation. But I did not meet a single Australian, not one, who did not say that this policy was very necessary, that they were facing the risks with their eyes open. This is because they feel that this great country of theirs, with so many raw materials, should be not only a primary producing country but should also be able to sustain efficient industry. They feel also that they must populate their country, that they must sustain a high birth rate, that they must reinforce a high birth rate with the importation of very large numbers of emigrants so as to be able to make their island physically secure in case the masses of Communist China, or Japan, should ever seek to move against them.

And so in New Zealand and in Australia we have two countries which are looking forward to great programmes of expansion, first of all in the agricultural field, and, as far as Australia is concerned, in the industrial field as well. One thing struck me very much when I was in New Zealand and Australia, and that was their marked interest in the future of South-East Asia—of Ceylon, of India and of Pakistan. They have an absolute conviction that the addition of these new independent members of the Commonwealth brings to the Commonwealth as a whole new life, vigour, strength and authority, and, as far as their resources permit, the Australians and the New Zealanders are keen to help the development of these three countries, and of Malaya too, by means of the Colombo Plan. I was able to see in Australia some of the work which is being done, some of the ways in which they are applying their help; I was able to assess, as a whole, some of the ways in which we are helping each other in the Commonwealth in that area through the Colombo Plan. I found in Australia students from Pakistan, India and Ceylon. I found there young men from Malaya learning administration. I found in India and Ceylon and Pakistan many people who had been trained here in the United Kingdom. So in the training of young men to take their parts in industrial and administrative life, the Colombo Plan is helping that part of the world a great deal. It so happened that I met Mr. Lester Pearson,

the Canadian Minister for External Affairs while I was in Calcutta. He was on his way to open a great dam in India towards which the Canadians had given the capital.

I was able in Ceylon to meet the mission which had come from the United Kingdom to Ceylon to advise them on the economic running of the railways, and in India the mission that had come from here to report on the possibilities of a steel plant for India. And again there were in South India, at the same time, consultants from this country who were advising on the possibility of working lignite deposits in South India, which, if these could successfully be worked, would revolutionize the whole economy of that area. And again, in the Post Office in Pakistan, there were experts who were advising on the lay-out of the most economical method of working telecommunications. And then again United Kingdom industry was also assisting. You will, of course, have seen that quite lately a British firm of consultants has been brought into India in connection with the provision of heavy electrical generating plant. And so, from all the Commonwealth countries in that area and from the United Kingdom there was converging upon Ceylon, India and Pakistan assistance in the most practical way to help them in their economic development. I was able to see there that Commonwealth co-operation is not just a theoretical exercise. It is producing goods and practical work in the field in these countries through the medium of the Colombo Plan. I shall show you, in a moment, that the help which is given under the Colombo Plan, of course, does not do much more than touch the fringe of the enormous challenge of these development plans. But, nevertheless, it is doing work of real value and every Commonwealth country is proud to be able to help in this way.

It was widely recognized, not only that the addition of Ceylon, India and Pakistan to the Commonwealth had given it new strength and authority, but also that the Commonwealth must remain a dynamic association if it is to live. Already the Commonwealth spans the globe—if you come to think of it there is a Commonwealth country in every Continent, counting the United Kingdom as a part of Europe for the time being—and I found that all were impressed with the fact that the Commonwealth, standing for the kind of principles of living which I have named earlier on and spanning the world geographically, insisting upon the rights of the individual, upon the common law and upon an impartial justice, has perhaps its greatest days before it. All were impressed that it can exercise an increasing influence in the much wider field of world civilization outside.

Can I just for one moment then come to my impressions, which I must repeat must be superficial, of Ceylon, India and Pakistan. After one week it is really almost an impertinence to have an impression at all, but of Ceylon I must say at once that it is one of the pleasantest islands that I have ever visited—full of cheerful, hospitable, friendly people. I was very envious, if I may mix my agricultural metaphors a bit, for it seemed to me that you only had to go and live in Ceylon and to own a coconut tree to be in clover! But I was impressed that here was a new and fully independent Commonwealth country. How very

different from some of the other countries we know behind the Iron and the Bamboo Curtains! And I could not but have this reflection that here, in Ceylon and India and Pakistan, were free and equal members of the Commonwealth, all enjoying the benefits which membership brings, all having gained their independence without a struggle, all fitted for independence, all proud of their independence and all receiving help and co-operation from those older members of the Commonwealth who were independent before them. And I could not help thinking that this is not such a bad advertisement, after all, for what is known as British Imperialism!

Ceylon, economically, is a viable country so long as they obtain good prices for their tea, rubber and their coconuts, which are their staple products and, happily, these prices are notably buoyant. They have always had one anxiety—they have always had to import rice which puts a strain on their foreign exchange, but I was able to see being applied there a method which, I believe, is thousands of years old and which probably originated either in Ceylon or in India and which had been long forgotten, now called the Japanese method of transplanting rice. I was able to see this being done and I was told, by those who were there and doing it, that the experiments were showing that the yield of rice will be stepped up by this method sometimes five or six times. So Ceylon should be in a very good way to making herself self-sufficient in this all-important foodstuff. I was able to see some of the irrigation schemes which they are undertaking, using very often irrigation channels that have been there for hundreds of years but have become disused. And then I was able to see colonization schemes, as they are called, which are an attempt at large-scale land-settlement, where families are being settled on the land and are being taught to make the best use of it and to use the more modern farming methods.

So it seemed to me that Ceylon was in a happy state and had good prospects before it. Of course, there are some problems. There is the problem of Indian labour which worries the people of Ceylon. There is the problem of a national language. But these sort of problems are just the problems which can be solved by patient statesmanship and, I am sure, they will be solved by them.

And so I left for India, envying the people of Ceylon the fertility and beauty of their country, their good fortune and, indeed, their prospects. Even to talk of India to people who have known it for so long—I have only seen it for a short week lately—must be absurd but I did form some impressions which might be of interest. First of all, of course, one was struck by the enormous authority in Asia which India has acquired in recent years—since she has gained her independence—and the opportunity that there is there for India to give a lead—and a decisive lead—to other Asian countries. I found also the most unstinted goodwill towards the United Kingdom and to British people among Indians following their independence. But, of course, the deepest impression made upon one was the immensity of the problems of development and life with which India is faced. Some idea of the scale of this challenge to authority and administration in India is given by the fact that the population of India is increasing by five millions a year. For instance, in this second five-year plan which the Indians

are adopting with a good deal of courage and foresight, they plan to spend in development some £4,000 million, and plan to create jobs for some 11 million extra people. During that time, however, the population will have increased by 25 millions. Anybody can see the scale of the problem and the challenge which it presents. All these people have to be fed, clothed, housed and employed and, indeed, it is a most formidable task for India even to hold its own at the present rate and standard of living. But I was able to see, albeit mostly from the air again, some of the schemes which they are adopting, and indeed have completed, towards irrigation. I was able to see some of the schemes to provide electricity, and I was able to see, in the country, what they call their community projects. There, carefully planned schemes are being operated which cover a number of villages—it may be a hundred villages at a time—and under expert supervision the people of the villages are being taught to improve their living standards, they are gritting their streets, they are cementing their wells, they are learning better methods of agriculture and co-operative marketing. There has been demonstrated to them, over these considerable areas of country, ways and means of improving their own lot and of helping themselves to a higher standard of living.

In the villages that I saw these community projects have made considerable headway, and you could see, in comparing them with other villages where such schemes had not been put into operation, the great advantages that are being brought to these parts of the country in this way. These schemes of rural development, and of irrigation, are going to cost a great deal. I do not think that it is realized here that the level of taxation in India is not so far different from what it is in this country—and we are in a position, after all, to know what that means!—but they are carrying this burden cheerfully and with a purpose because they know full well that these schemes are necessary, that the increasing of the agricultural production of these village community schemes is necessary, that this is the only way in which India will prevent the spread of communism through their country. If conditions of great poverty remain there, then the prospects of communism and subversion are, of course, enhanced, but so far as the standards can be raised by these methods—and everybody told me this—they believe, and I think believe rightly, that this is the way to combat the communist menace in India.

In Pakistan, also, there are many similar schemes for the improvement of agriculture. They are working under great difficulties, interrupted time and again by floods which must have been terribly difficult to deal with and which brought real hardship to thousands of people. Yet they have made remarkable progress. In seven years they have an export surplus of jute, they are self-sufficient in cotton textiles and have an export surplus of raw cotton, and they are becoming self-sufficient in rice.

Economically they labour under one great difficulty. This is a serious shortage of foreign exchange which puts a brake and a restriction on development. But I was told that they are now concentrating all their resources upon those industries which can earn increasing wealth abroad. And, if they can do that, it will be a first step to put Pakistan's economy on a really sound basis.

But neither in India nor in Pakistan, it seemed to me—and as I think they all would admit—can they begin to reach the full ambitious targets of their development programme unless they get very substantial help from capital from overseas and from people with real technical ability who can help them to run the industrial projects which they need. The opportunities are there, there is no doubt about that. But when capital is short in the world it must be attracted and two conditions really are necessary, I think, before a great flow of overseas capital will come into either country. Firstly, conditions must be provided which will give confidence for the years ahead, and capital must be assured that it is wanted and that it is well treated. Secondly, if people from Europe, and particularly young men from the United Kingdom, are to go and make their careers in India and Pakistan, and to help in these development plans—and I believe there are many, many people here who want nothing better than look forward to that sort of career—then it must be made clear to them that conditions will be reasonable for them and that they will be able to look forward to an uninterrupted career, without being in any way penalized.

And so, if I may say so, I believe that two things ought to be done. I think that both countries, if they want to attract capital from here and from other countries in Europe, should look very carefully at their policy in respect of taxation and the rest of it, so that conditions of confidence are created in which overseas capital can operate to advantage and that they should also try to attract young men with good technical qualifications to help them. And on our side, and on the industrial side, I believe we ought to review the opportunities in India and Pakistan. These are surely immense and we ought to be ready, as far as possible, to go in in partnership with Indian and Pakistan capital, with Indian and Pakistan direction, and with Indian and Pakistan management and labour, so that there may be a new partnership in the future to help in this enormous programme of development. I have never seen a more fertile field for co-operative development if India and Pakistan and the countries of the West can combine to take advantage of it.

Those were some of my impressions and I return to the ties which bind us together—the common way of life, supported by common institutions, by Parliament, by the system of justice, by a free press and by the free institutions which we all enjoy in common. Here is another important tie: the knowledge that together we can do something to bring peace and security. I found an absolute identity of view on the objects of our foreign policy. All these Commonwealth countries are seeking peace along with us. In all of them, with the exception of India, I think I might describe our foreign policy as being one of strength and conciliation—that is the shortest and, I think, the most accurate way I can describe it. The Indians believe, and sincerely believe, and there are reasons for their belief, historical reasons—that foreign policy should be all conciliation and that strength, and that in particular the organization of regional pacts, is not consistent with a policy of conciliation and working for peace.

I was asked the other night on the wireless whether Indian foreign policy was inconsistent with that of the United Kingdom and of the rest of the

Commonwealth, and my answer was a decided 'No!—it is certainly not inconsistent'. If our policy is strength and conciliation, then the more strength we can get from people who are willing to give it the better, and the more conciliation we can get from people who are willing to give it the better. And India is using all her influence, in Asia in particular, on the side of peace by conciliation.

And then, lastly, there is the economic association. We are all members of the sterling area. We have our preferences and trade arrangements among the members of the Commonwealth which give us some advantage, and the particular advantage that we have, I think, is in the pooling of our resources, which is an insurance and gives strength to the whole. And so everywhere, from Invercargill in the south of New Zealand to the Khyber Pass in the north of Pakistan I found essential agreements, an essential unity, a belief that the Commonwealth countries together could exercise an influence entirely for good on world affairs, and, let me repeat, the unanimous wish that the United Kingdom should remain physically and economically strong enough to give a lead to the whole.

## DISCUSSION

MR. H. H. HOOD: Would Lord Home tell us whether New Zealand is taking any, and if so what, steps to remedy its shortage of labour?

THE LECTURER: I cannot quite remember the New Zealand immigration figures, but they are regularly bringing in quite a number of people from outside, a reasonable proportion of whom are British. They would like more English to come. I said 'both in Australia and New Zealand', for although both New Zealand and Australia want the same kind of people, the technically able people that we have much use for here, nevertheless we are ready to help in their recruitment as much as we can so as to get a steady flow of good young British people going out to those countries.

MR. SYED M. YEHIA: Does not Lord Home think that the differences between certain Commonwealth countries should be taken up by senior members in an effort to reconcile them and try to solve the difficulties as, for example, between India and Pakistan on the Kashmir issue?

THE LECTURER: The Kashmir question, of course, is one of some duration now and it is, in fact, a difference of opinion between two Commonwealth countries, both of which are independent. Those Commonwealth countries ought to be able to settle this question by themselves, but it has been taken to the Security Council. The Security Council has made a recommendation that there should be a plebiscite on the question to settle it. Now that recommendation has not yet been acted upon, but I understand that the Pakistan Prime Minister is taking the initiative—he is calling a meeting in a day or two about the Kashmir question to decide on policy—and I do not think it is for me to comment now on that question. I can only express the hope that it will be settled between the two Commonwealth neighbours.

MR. HAMID ALI: Lord Home mentioned the high rate of taxation in India. The taxation rate in Pakistan is comparatively low, and the Government of Pakistan have offered quite a few concessions to investors. This should put a different complexion on this problem of inducing foreign capital to take greater interest in Pakistan's development projects.

THE LECTURER: I am delighted personally that these concessions have been made and I think Pakistan is going the right way to encourage foreign capital. It does not need a great deal of encouragement I assure you! I met many people who would like to invest money in these development plans, but I think the more attention which can be given in Pakistan and India to these questions of attracting foreign capital, and to the very reasonable conditions that are necessary to attract it, the better. I am able to say, and I think this is true, that the British investor and business man to-day does not look for a quick return. He is not looking for a way to exploit the country in which he puts his money. He wants to identify his firm with the life of the country and to share its fortunes over a long-term future. I think that the Indian and Pakistan Governments do pay some attention to this. You will find plenty of capital coming from the West, a lot of it from this country, and there is nothing we should like better than to be able to share in those development plans, so full of possibilities for your country and, I think, profitable to ourselves.

MR. J. P. BRANDER: I should like to ask Lord Home if he quite realizes the position of investors in this country as regards Pakistan? For five years or so it was impossible to get any refunds of income tax, and now the payment of dividends to private investors has stopped. I learned this in a bank in London, so it does look as if the hope of private investments from this country in Pakistan is very doubtful. I would suggest that the Government here should do its best to try and impress upon the Pakistan Government that this is not the right way to try to encourage private investment in Pakistan.

THE LECTURER: I am not quite conversant with these particular details which you have mentioned, but all I can say is that I did find goodwill there. In Government circles they all said that they would like to encourage British capital—and I think the British business people here have organizations in London and over there who will put the British case, and what else is needed, before the Pakistan authorities. I think that that is the best way to conduct these affairs and I am sure there will be commonsense on both sides.

MR. HAL GUTTERIDGE: What steps has the Secretary of State for Commonwealth Relations in mind to accentuate and encourage the Commonwealth to a closer relationship and a more bountiful combination of effort?

THE LECTURER: This is, I suppose, really a question on the machinery. There are some people who think that it might be a good thing to have a sort of Central Brains Trust for the Commonwealth and that that would give more effective direction of Commonwealth policy. All I can say to that is that no Commonwealth government will consider it for one moment! So that is out, and what we have to do is to keep our machinery flexible. We have the Commonwealth Prime Ministers' meetings which can take place at fairly regular intervals, or whenever they are required, and they lay down the broad Commonwealth policy for the period ahead. Then we have meetings of the Finance Ministers; and they co-ordinate the financial and economic policies. Then we have the sort of perambulation of Ministers—I have been one of them lately—who go round and meet their opposite numbers and come back armed with each other's views, which they then keep constantly before the Cabinets of the different countries.

I think the machinery is working fairly well. But we must never be contented or complacent, and we deliberately keep the machinery flexible so that if any good suggestion comes along—perhaps you have one!—we can adopt it.

MR. M. I. RAHMAN: Now that Pakistan is an equal member of the Commonwealth, does Lord Home consider that there is any possibility for the young men of Pakistan to serve in the Colonies of the British Empire? Or is the British Government prepared to encourage such young men?

THE LECTURER: I do not know that we have had any proposal that the British Government should help young men from Pakistan, let us say, to go into positions in the Colonies. But we are helping to train a lot of young men from Pakistan for various administrative or other posts. One thing that did strike me very much on this tour was the sort of fraternity of young men that I met in India and Pakistan and Ceylon who had been to British Universities, and American and European Universities, I think, who, as a result, had a very wide outlook on Commonwealth and world affairs. I would just like to look into that suggestion about young men from Pakistan or India working in the Colonial field if I may.

MR. GEOFFREY G. YOUNG: As a Public Relations man I have noticed that ignorance about the Commonwealth among the ordinary people of this country is colossal. I feel that the various Information Departments of Her Majesty's Governments in the Commonwealth are doing their best but I do not think the impact is really as tremendous as it ought to be. Does not Lord Home think that it would be a good idea to see if the various Governments of the Commonwealth would join together in financing and setting-up an Imperial Information Board whose business it would be to 'sell' and explain the Commonwealth to the British.

THE LECTURER: I think it is an admirable idea!

MRS. KEIGHLEY-BELL: May I add to that suggestion by saying that the education should start in the schools? So far as my personal knowledge is concerned, there is little or no education on the Commonwealth and Empire, and what they mean to us, given in the schools of this country.

THE LECTURER: When I was out in these Commonwealth countries I did pay particular attention to the organization there of effective information about the United Kingdom. Of course I visited the British Council, who showed me the work that they were doing—and very valuable it is, of course not in the least political, but all the more valuable for that. Now I am home I will certainly see if there is any way in which we can improve the information to the British people about the members of the Commonwealth. I would like a little time for that but I will see what I can do.

MRS. KEIGHLEY-BELL: May I add that there were 100 scholarships offered for McGill University in Canada to various schools in this country, and I think I am right in saying that only 25 were taken up or applied for.

SIR STANLEY REED, K.B.E.: May I ask Lord Home whether there is any machinery in the Commonwealth Relations Office to bring home to students in the British Universities and Technological Colleges in this country that there is opportunity for service overseas, beyond fat and cushy jobs under the Colombo and other plans in pursuit of those ideals he so admirably summarized in his opening remarks this evening?

THE LECTURER: I was hoping myself to see some of the University authorities and the Appointment Boards on this subject. I am going to take the opportunity to do that at some point.

THE RIGHT HONBLE. LORD BIRDWOOD, M.V.O.: I believe Lord Home was asked to comment, in Karachi, on what some people regard as a figment of the imagination, about Afghanistan. I wonder if Lord Home would care to repeat the answer I believe he gave then in terms of some Commonwealth encouragement to Pakistan.

THE LECTURER: The Afghans are certainly pursuing an aggressive policy in respect of Pakistan and some minor violations of the frontier have resulted. We have made it perfectly clear to them that this policy is wrong and disapproved of by the United Kingdom; that the frontier of Pakistan in its present state is the legal frontier of Pakistan. I do not think we can do more for the present.

MR. MAJID NIZAM: Does not Lord Home think that by praising publicly India's so-called neutral foreign policy, you have made it difficult for Pakistan to remain in the Baghdad Pact?

THE LECTURER: No, certainly not, I quite deliberately said that really all the members of the Commonwealth subscribe to a foreign policy which I described as 'strength and conciliation' and all of us, in our different ways, are members of different regional pacts. Canada is in NATO, Australia and New Zealand are in ANZAM with us and Pakistan has joined the Baghdad Pact with ourselves and the Turks and the Persians, and we believe firmly, and nothing will shake our belief, that the answer to communist aggression is strength. I was at pains when I talked to the Indian Institute of International Affairs to say that we had learned two lessons in our European history; first of all that weakness was an invitation to an aggressor and secondly that neutrality had no place in the context of totalitarian ambition. That is what we believe.

Now the Indians believe something different. We would, of course, prefer to have the whole strength of India thrown decisively on the side of the free world but, nevertheless, if they are not willing to do that—India is an independent free country—we welcome the fact that she throws all her strength on the side of conciliation. We hope that at some future date she may adopt the policy of the rest of the Commonwealth, but for the moment we are grateful for her help in that way.

MRS. GREGORY: May I ask if Lord Home saw anything of the impact of the Russians, Marshal Bulganin and Mr. Khrushchev, who went to India on a visit?

THE LECTURER: Of course, they are coming here!

THE CHAIRMAN: I will now call upon His Excellency the High Commissioner for Pakistan to propose a vote of thanks to the lecturer.

HIS EXCELLENCY MR. M. IKRAMULLAH: It gives me very great pleasure to propose a vote of thanks to the Secretary of State, who has this evening given us a most interesting discourse on his recent visit to a great many countries of the Commonwealth.

When he succeeded Lord Swinton, who was extremely popular, we said what a difficult job he would have on his hands, but before long, by his sympathy, understanding, patience and his inability to see a discordant note, he has succeeded in winning the heart of everyone. He has shown himself as the ideal Secretary of State for Commonwealth Relations.

I can only speak about my own country, and I am glad to be able to say that his short visit to Pakistan has left nothing but goodwill behind. Ever since he has come back I have been hearing from people what a fine impression he and Lady Home have left behind in Pakistan. My only hope is that this particular trip will be repeated—I do not know whether Her Majesty's Exchequer will be able to bear the expenses again—but Lord and Lady Home will receive a most cordial welcome.

May I, on behalf of all the three Societies, thank you very sincerely, Lord Home, for the fine address you have given us this afternoon.

*A vote of thanks to the Lecturer was carried with acclamation.*

THE LECTURER: Thank you very much Your Excellency. My wife and I enormously enjoyed our time in Pakistan, with a most hospitable and friendly people. It has been a great privilege to talk to the three Societies, with their roots so deep in the past, and I must apologize once more that my knowledge, compared to yours, is superficial. I said, when I went on this tour, to the people in the countries concerned, 'I came to learn and to listen', and they took me at my word, and I have learned a lot. But, Your Excellency, of course I shall go back to Pakistan and you will realize of course,

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AN ACCOUNT OF THE RECENT COMMONWEALTH TOUR

after the measures we took a few weeks ago, that Her Majesty's Exchequer is strong enough for anything!

SIR SELWYN SELWYN-CLARKE, K.B.E., C.M.G., M.C. (Chairman, Commonwealth Section Committee): It is my privilege to propose a warm vote of thanks to our chairman, Sir Patrick Spens, for so kindly conducting the proceedings at Lord Home's masterly account of his recent Commonwealth trip. I am sure you will agree that no one would have lent greater dignity to the chair than Sir Patrick, but before moving this vote of thanks I should like your permission, Sir, to say, on behalf of the Commonwealth Section of the Royal Society of Arts, what a great pleasure it is to have the welcome presence on the platform of Sir Francis Low and Sir Harold Shoobert, and in the audience of His Excellency the High Commissioner for Pakistan and the Begum Ikramullah and so many other distinguished representatives of the East India Association and the Pakistan Society. Will you now help me to express our very sincere appreciation to Sir Patrick for presiding?

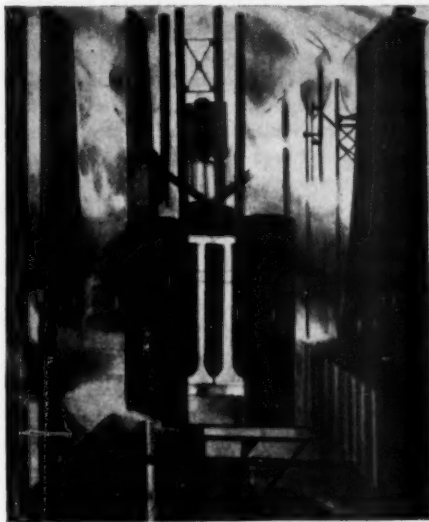
*A vote of thanks to the Chairman was carried with acclamation.*

THE CHAIRMAN: I, on behalf of the two visiting Societies, must express to our hosts our most grateful thanks for being allowed to have this really important gathering in this lovely room. It is a very great joy to us to have the opportunity of coming amongst you.

*The meeting then ended.*

## GENERAL NOTES

### TWO NATIONAL COLLECTIONS



*Factories, 1918, by  
Joseph Stella*



*Man in the open air, c. 1915,  
by Elie Nadelman*

Ten years ago the British public was given its first opportunity of seeing at the Tate Gallery something like the full range of American painting from the eighteenth century onwards. In that exhibition, however, although it included a number of

works by contemporary artists, no attempt was made to cover the whole modern field. More recently, the Institute of Contemporary Arts has exhibited a group of Transatlantic Symbolic Realists, as Mr. Lincoln Kirstein termed them, and other examples of art since the war, such as Mr. Alexander Calder's mobile constructions in steel and wire, have come to London from the States. Nevertheless, the present exhibition of Modern Art in the United States, arranged by the Tate Gallery with Arts Council aid and organized by Mr. Porter McCray, is certainly the first comprehensive assemblage of modern American art we have seen in London. This travelling collection of something over two hundred paintings, sculptures, and prints, drawn almost entirely from the New York Museum of Modern Art, has come to Millbank by way of Paris, Zurich and Frankfurt, and remains at the Tate until 12th February. It presents an opportunity, not to be missed, of reviewing a nation's significant achievement and revising previous ideas.

If there is one mood that seems to prevail above all others in this diverse collection, it is a spirit of uneasiness. A disquieting realism seems, indeed, to be the most significant contribution of American painting, just as the sculptors appear generally most assured in abstraction. Mr. Ben Shahn—one of a number of Transatlantic painters of Russian extraction—is most disturbing in his tempera painting of a dead soldier on a Pacific shore, and a forlorn air invests even his handball players. His is a curiously distinctive style of cut-out figures and minute detail, the only pity being that paint is already flaking from the fibre-boards on which he works. Mr. Andrew Wyeth's *Christina's World* is another delicate essay in nostalgia. A haunting image in truth it is, this crippled girl alone in a field and contemplating her home, so crowded with associations that they seem almost palpable. A more robust painter is Mr. Edward Hopper, less subtle in conveying his sensations, but alive to the impersonality of metropolitan life. His *New York Movie* is, if you will, rather obvious in sentiment and commonplace in handling. Yet the image of the girl attendant, lonely and absorbed in a multitude, still has the power of impressing itself on the mind's eye.

Of the other varieties of realism here, one remarks the *naïveté* of the neo-primitives, and the vein of savage satire in Mr. Peter Blume's *The Eternal City*, a surrealist panel in which the forbidding head of Mussolini springs like a jack-in-the-box out of the ruins of Rome. Another of Mr. Blume's architectural fantasies is evidently inspired by Fernand Léger, who incidentally exerted less influence on American painting than might be imagined during his residence in the United States. The macabre vein appears again in Mr. Hyman Bloom's dead bride bedecked with flowers, the jewelled colour recalling Odilon Redon's.

Prevalent as European influences are in such satirical paintings, they are even more marked in the room of contemporary abstractions with their echoes of Mondrian, Klee, or Kandinsky. A number of these canvases are so obviously inflated and vacuous that one cannot believe they made much impression in Paris—whose *École* inspired them—or will provoke more than mild curiosity in London. Even so, there is a certain melancholy interest in observing the rise since the war of some abstract expressionists, principally Mr. Jackson Pollock who dribbles paint on the canvas and works it with his hands in some semblance of an aerial survey map, and Mr. Willem de Kooning, another feverish expressionist whose apologists appear to find his art analagous to 'the traffic madness of New York'. More rewarding painters, it might be felt, in this room are Mr. Philip Guston who conveys, through the atmospheric colour of his abstraction, the sense of boundless space of a late Monet, and Mr. William Baziotes whose shapes have a mystery, and intensity of colour, that relate them to the symbolism of Redon.

The vigour and conviction of an older generation of moderns, notably such cosmopolitans as Mr. Max Weber, Mr. Lyonel Feininger, and the late Marsden Hartley, lent the first room an authority unequalled elsewhere. Weber was, indeed, the first cubist associated with the School of Paris to surprise the New World with the

invention of the Old; and Feininger's strength likewise derives from cubism, so eminently suited to the functional architecture of New York. In 1912 Marsden Hartley also came under the influence of cubism in Paris, but he soon went to Germany drawn by the ideas of the *Blaue Reiter* group, with whom he showed in Berlin the following year. In this room of earlier paintings is also hung a collection of modern prints, remarkable for their inventiveness and technical resource, which some visitors may well consider the most beguiling feature of the exhibition.

There remain, however, distributed through five rooms, the sculptures; and a painted bronze, *Man in Top Hat*, by the late Elie Nadelman, which confronts the visitor in the vestibule, might almost seem an epitome of the collection. Bizarre, arresting, and wholly *de nos jours*, the bust is typical of Nadelman's quasi-surrealist sculpture which includes a suave dummy in a bowler hat, and a fluid group of women in metal that seems scarcely solidified. Among the more numerous abstractions are a rather pretty construction by Ibram Lassaw, a spiky work in lead by Herbert Ferber, and Alexander Calder's pendant mobile of 1949, the steel plates coloured more sombrely than they have been since, and the contrivance appearing rather unwieldily in contrast with Mr. Calder's more recent mobiles which, seen together, may be oddly exhilarating as they flutter and weave through space, like tropical birds amid branches.

Space permits no more than a comment on the valuable selection of pictures from another national collection, that of the National Museum of Wales, now exhibited at Agnew's, Old Bond Street, to assist the museum's funds. The important nineteenth-century French and other paintings bequeathed by the late Miss Gwendoline Davies, C.H., together with a variety of Richard Wilsons and much else of distant and recent times, make this one of the most ingratiating, as it is also one of the youngest, of the national collections. In the upper gallery at Agnew's, a replica of *El Espolio* from the studio of El Greco, is among the more important early canvases bequeathed by Gwendoline Davies; while, downstairs, several portraits by Mr. Augustus John, including heads of W. H. Davies and Dylan Thomas, testify to the more regional character of the modern paintings.

NEVILLE WALLIS

## SPANISH INTERNATIONAL APPRENTICES COMPETITION

For the ninth year in succession an international competition for apprentices in a variety of trades is to be held in Madrid in April. The purpose of the competition is to bring together apprentices of several nationalities who spend a fortnight in Madrid, their expenses being paid. During the fortnight's stay apprentices take part in contests each in his own trade, for which they are advised to bring their own hand tools. A number of visits to places of interest are also arranged.

Applications from British apprentices will this year be dealt with in the order in which they are received. They should be made by 15th February, 1956, in a form which may be obtained, together with full particulars of the competition from Mr. F. D. Hill, 5 Best Lane, Canterbury, Kent.

## NIGERIAN EXHIBITION

The Imperial Institute, South Kensington, is holding at present a descriptive exhibition related to the coming Royal tour of Nigeria. It takes the form of a survey of the country and its people, and will later be enlarged by photographs of Her Majesty's progress through the country.

The exhibition, which will remain open until 25th March, is on view from 10 a.m. to 4.30 p.m. on weekdays, from 10 a.m. to 5 p.m. on Saturdays, and from 2.30 to 6 p.m. on Sundays. Admission is free.

## RESEARCH AWARDS

The Trustees of the Leverhulme Research Fund offer to British-born subjects two scholarships of £600, for advanced study on the Continent of Europe within the academic year 1956-57. No subject of study except modern languages is barred, though Arts subjects will receive preference. Candidates, who must be between 26 and thirty years of age, should be normally resident in the United Kingdom, and available for interview in London in April. Application forms and full particulars may be obtained from: The Secretary, Leverhulme Research Awards, St. Bridget's House, Bridewell Place, E.C.4. The closing date for applications is 28th February, 1956.

## LIGHTING CONFERENCE

The Summer meeting of the Illuminating Engineering Society will be held at Harrogate, from 8th to 11th May, 1956. The four days will be devoted to a series of lectures and visits to factories, and the programme of the conference shows that particular emphasis is to be given to the application of new developments in lighting, and the proceedings will, therefore, be of interest to a wide range of users of illuminations as well as to engineers. Fellows of the Royal Society of Arts are invited to attend, either the whole meeting, or on single days only. The fee for non members of the I.E.S. is £2 for the whole meeting, or £1 for single days. Full details may be obtained from the Illuminating Engineering Society, 32 Victoria Street, London, S.W.1.

## BENJAMIN FRANKLIN CELEBRATIONS



Reproduced above is the medal, designed by Sir Jacob Epstein and struck by the City of Philadelphia, which was presented to Sir Winston Churchill last week as part of the celebrations of the 250th anniversary of Franklin's birth.

Fellows who attended Professor Andrade's lecture on 'Benjamin Franklin in London' at the Royal Society of Arts on 18th January, may be interested in a lecture on 'Benjamin Franklin; natural philosopher', which is to be delivered by B. F. J. Schonland, C.B.E., F.R.S., M.A., Ph.D., Deputy Director, Atomic Energy Research Establishment, Harwell, on 26th January, at the Royal Society, Burlington House. Franklin was the most celebrated electrical experimenter and thinker of his day, being best known for his one-fluid theory of electricity, for his work on the electrification of thunder clouds and for his invention of the lightning rod. The lecture will evaluate these contributions in the light of modern knowledge.

SOCIETY OF INDUSTRIAL ARTISTS  
MEDAL

Reproduced here is the recently inaugurated medal of the Society of Industrial Artists. The medal, which was designed by Professor R. Y. Goodden and made by Mr. Leslie Durbin is to be presented annually to a designer of distinction. The award for 1955 was made to Mr. Milner Gray, Master of the Faculty of Royal Designers for Industry, last month.



OBITUARY

DR. F. SHERWOOD TAYLOR

We record with regret the death, on 5th January, of Dr. F. Sherwood Taylor, Director of the Science Museum, South Kensington.

Frank Sherwood Taylor, M.A., B.Sc., Ph.D., was born in 1897. Educated at Sherborne School, and Lincoln College, Oxford, he was for 12 years, from 1921, chemistry master at various schools. An appointment as assistant lecturer in inorganic chemistry at Queen Mary College, London, followed, and from 1940 until his appointment as director of the Science Museum, he was Curator of the Museum of the History of Science at South Kensington.

Mr. Taylor was greatly interested in the history of science, including alchemy, and his published works included *The World of Science*, and *The Alchemists*. He was a former president of the British Society for the History of Science.

Mr. Taylor was elected a Fellow of the Society in 1937.

NOTES ON BOOKS

GRAPHIS ANNUAL, 1955/1956. Edited by Walter Herdeg and Charles Rosner. Zurich, Graphis Press. 70s

Designing for advertising is becoming increasingly recognized as a special vocation in its own right, and is not to be confused with the production of fine art. Advertising is the communication of ideas in terms of black marks on a white surface—or coloured marks on a coloured surface. In other words: the press advertisement, the booklet,

the showcard and the poster. Thus: artistry in arrangement, in tone values, in typography and letter forms, is just as essential as artistry in painting and drawing.

To most people 'art' means 'fine art'. There have been, since the turn of the century, exhibitions to the public and also books published to draw attention to the importance of 'art' in advertising. These tend, willy-nilly, to suggest that in the degree to which fine art finds its way into advertising, is the advertising improved. Unfortunately, this is not always so because the easel artist, *per se*, is not concerned with the solution of advertising problems in terms of graphic communication, but *solely* with the æsthetic qualities of his picture. Furthermore such emphasis on the importance of art in advertising tends to force the advertiser into the *rôle* of being a patron of art. It is true some large companies with products universally known and distributed throughout the world, can afford to act in this capacity and undoubtedly their advertising as a result is often distinguished and æsthetically satisfying. However, the average advertiser is more concerned with the development and success of his business, and regards the idea of being a patron of the arts not only as an extravagance but as a misleading conception of the function of his advertising. It is this aspect of the matter which separates the job of designing for advertising from that of easel art.

The problems set by advertising requirements in the world to-day are seen to be such that they can only be solved satisfactorily by designers mastering the many diverse fields of graphic communication, particularly as these fields are increasing in number. In addition to the more obvious advertising media the designer has had for some time to concern himself also with the appearance of window displays, letterheads and invoices, packaging, labels, delivery vans, shop fascias and even exhibitions. Now, new channels of expression are being added to his practice in the problem of the visual form of the advertising film and the television programme. Thus while the vocation of advertising design has nothing to do with art *in* advertising—nevertheless the result of the activities of the mature designer working in all these diverse fields can, and demonstrably does, produce an art *of* advertising in its own right. And in doing so is proving to an increasing number of discriminating advertisers that 'good design is good business'.

Those people therefore who are interested in the techniques of advertising expression, in addition of course to designers and the business men who use advertising, must be grateful for books such as the current *Graphis Annual* which shows the work being done internationally by specialists in advertising design. Study of this volume—which includes some 755 illustrations with 66 in colour—illustrates the marked advances in technique and imaginative ideas that are taking place annually.

To assist the reader—or perhaps one should say, observer, because there is the minimum of reading matter, except for Charles Rosner's penetrating introduction—the illustrations are grouped into some 17 categories. These cover press and magazine advertisements; posters; booklets of all kinds; magazine covers and book jackets; letterheads, calendars and Christmas cards; gramophone record covers (a very interesting development since the hole that used to pierce the covers has disappeared, thus making an excellent square shape for the designing of images evocative of the recording). There is a section on trade marks and packaging, and a particularly interesting one on film and television advertising.

It will be seen from the above list that practically all fields of design in the manifold advertising media of to-day are covered in this important book. Of course, there are a number of examples of 'fine' art being reproduced as part of an advertisement, but in the main the majority of the examples demonstrate the specialist designers' skill, sensibility and authority of expression in the graphic solution of advertising problems.

ASHLEY HAVINDEN

ORIENTAL BLUE AND WHITE. By Sir Harry Garner. Faber, 1954. 30s.

This lucid account of the underglaze blue porcelains of China, Korea, and Japan will more than hold its place in the series of monographs on ceramics published by Faber under the editorship of Honey and Lane. The text is sensible and persuasive and the plates are excellent, and all collectors of oriental porcelain would be wise to add it to their bookshelves.

Sir Harry Garner is no supporter of the existence of Sung blue and white: on this topic he writes: 'The view (in Europe) most strongly supported to-day is that blue and white was developed from the *shu fu* porcelain of the Yüan dynasty, which was, in turn, developed from *ying ch'ing*' (that is, of the Sung dynasty), and 'the first half of the fourteenth century' is the earliest caption he will permit himself for any of the pieces he has illustrated. Among these pieces appears, on Plate 4, the pear-shaped porcelain vase, decorated with chrysanthemums in underglaze blue, presented to the British Museum in 1924 by Mr. Loo, and said to have been found in a Sung tomb at Kweiki in Kiangsi, not far distant from Ching-tê Chen, with other objects; among which was a *ying ch'ing* porcelain headrest, which was also presented to the Museum at the same time, and which, according to Hobson, 'We should unhesitatingly accept as Sung'. The date of the pillow certainly agrees with Hobson's estimate, but we have no real proof that vase and pillow were excavated together. Hobson illustrated this piece in an article, 'Blue and White before the Ming Dynasty',<sup>1</sup> describing it as one of the most convincing specimens of blue and white reputed to belong to the Sung dynasty.

'We may state with confidence', writes Hobson on another occasion,<sup>2</sup> 'that blue and white and enamelled decoration was in use in certain minor factories in the less considered wares of the Sung dynasty'. But positive proofs of the existence of Sung blue and white, such as a witnessed excavation or a reliably dated inscription, still elude us. Neither the various pieces of blue and white porcelain carrying Sung *nien hao* published in the *Toji*<sup>3</sup>, nor the blue and white pieces tentatively attributed by Hobson to the Sung period<sup>4</sup> carry much conviction to-day. For, as Pope says, 'The one irrefutable fact is that in the matter of Sung blue and white there are no facts whatever to deal with. Word has been spread about that such and such pieces have been excavated from Sung tombs, but no witnesses have come forth, no documents have turned up and, most unhappily of all, the pieces themselves have shown no characteristics that link themselves conclusively to the Sung dynasty or include any qualities that distinguish them clearly from other wares usually considered to be early blue and white.'<sup>5</sup> On the same subject, Gray writes: 'The tradition in China has been that it (blue and white) goes back to the Sung dynasty, but the evidence for this has been lacking and it is best to treat it with reserve'.

It is, however, generally agreed that at least two groups of Chinese blue and white go back to the early years of the fourteenth century, for there is the famous pair of dragon vases in the David Foundation (one is illustrated in Plate 6) dated 1351, and recently Mr. J. S. Kirkman has excavated the fragment of a bottle on an old Arab settlement on the Kenya Coast, Kilepwa, near a tomb of about 1350. This fragment is similar to the Clark vase on Plate 3.

Blue painting on crackled wares at Yung-ho Chên in the Sung dynasty is mentioned in the *T'ao Lu* and the *Po Wu Yao Lun* speaks of 'the blue decoration of the Yao wares of the Sung and Yüan period', and it remains to be seen whether the investigation of scholars will prove the inaccuracy of these texts or that the passages themselves were later interpolations. Without question, the Loo vase is very similar in shape to some of the *temmoku* bottles from Honan, which are associated with a Sung date.

Underglaze blue painting, together with black, was certainly in use in Persia from the earliest part of the thirteenth century, and painting in cobalt in a tin glaze goes back in Mesopotamia to the ninth century. Shall we discover that this underglaze blue technique was introduced into China from the Near East in the thirteenth

century, when Persia was brought into close relationship with China by Hulugu Khan, who reigned in Persia from 1256 to 1265, when the Mongols had already established themselves in North China under his brother Kublai Khan? Should this speculation prove correct, the first blue and white Chinese pieces might well have been produced in the north of China before the Southern Sung dynasty expired in the south in 1279, and Ozaki be quite entitled to write as he did that 'This technique (blue and white) was invented towards the end of the Sung period, but no piece with a Sung inscription has been discovered'.

But my only real difference of opinion with Sir Harry Garner that I could discover, as I turned over the pages of his 96 well-chosen plates, was over the Clark dish (Plate 2C) with a moulded five-clawed design surrounded with blue clouds inside, and with blue, five-clawed dragons underneath. He dates this piece 'to the first half of the fourteenth century' on what I would call a mistaken analogy with the stem cup (see Plate 2A) in which the blue dragons outside are three-clawed and the moulded dragon inside four-clawed, adding 'We have already pointed out that not too much significance must be attached to the number of claws'. But some of us remain to be convinced that any dragon with five claws drawn on Chinese porcelain can be dated as early as the Yüan dynasty. In my book *Ming Pottery and Porcelain* (1953) I published this same dish, on Plate 24 A, as 'about 1400', and I would still place it either in the reign of the first Ming Emperor Hung Wu (1368-1398) or in that of his son Yung Lo (1403-1424) and since I expressed this opinion I notice that Pope, in a review on the exhibition of blue and white Chinese porcelain held in London by the Oriental Ceramic Society in 1954, referred to this same dish as follows: 'This beautiful little dish, for all its smoky, greyish glaze and rather rough paste, has always been one of the writer's leading candidates for Hung Wu'.<sup>6</sup>

It would be graceless to end on what is a trivial difference of opinion on the dating of one single dish; for this work is a most scholarly contribution to the subject and is to be recommended strongly to all students in this field. Moreover, it is the only work of its kind devoted exclusively to the study of the whole field of Oriental blue and white, of which Sir Harry Garner is one of our leading collectors and connoisseurs.

SOAME JENYNS

#### REFERENCES

1. R. L. Hobson, 'Blue and White before the Ming Dynasty', *Old Furniture*, Vol. VI, Jan./April, 1929.
2. R. L. Hobson, *Wares of the Ming Dynasty*, 1923, page 14.
3. *Kyoko Ueda*, Vol. III, Toji.
4. Vase. *Eumorfopoulos Collection*, Vol. IV, Plate I.D. and three pieces in the Russell Collection published by Hobson in *Chinese Ceramics in Private Collections*, 1931, Figures 296, 297 and 299, as 'probably Sung'.
5. John Pope, *Fourteenth Century Blue and White in the Top Kapu Saraye in Istanbul*, Washington, 1952, page 1.
6. John Pope, 'Blue and White', *Far Eastern Ceramic Bulletin*, Vol. VI, No. 2, Jan. 1954, page 11.

HAND-COLOURED FASHION PLATES, 1770-1899. By Vyvyan Holland. Batsford, 1955. 42s

The charm of hand-coloured fashion plates appeals to many who are not particularly interested in period costume. They care but little whether the lady portrayed is wearing a crinoline or a canazou; what matters to them is—who designed the plate? Such collectors treasure specimens by particular artists as millionaires once collected old masters. Others view them simply as quaint relics of the past or perhaps as dainty souvenirs of 'the dresses of our grandmothers'. For such Mr. Holland's book is an admirable guide. It contains a fairly complete list of the various magazines (English and foreign) with their dates and names of the various designers which will enable collectors to place their specimens; and there is useful advice to those who are beginning the search.

Some minor errors might be corrected in future editions. The magazine *Young Ladies of Great Britain* appeared in 1869 and therefore was not 'a stop-gap during

the Franco-Prussian war'. Among the fashion magazines of the 'nineties *The Gentlewoman* is not mentioned.

To the student of period costume coloured fashion-plates serve a more serious purpose. They are viewed, not as works of art but as providing information about what was worn at a particular date; it is immaterial that a fashion, formerly considered 'smart', strikes Mr. Holland as an 'abomination'. But all feminine fashions have, at some time or other, passed through the phase of being thought 'hideous, ridiculous, outrageous, etc., etc.'. That is, when they no longer happen to attract but repel.

Mr. Holland explains that he does not profess to have expert knowledge of period costume; it would therefore have been wiser not to have committed himself to such statements as 'it is only during the past fifty years that serious attempts have been made to record its vagaries' (that is, fashion's). The works of Strutt, Fairholt, and Planché surely refute that assertion. To say, 'Until the second half of the eighteenth century a general trend of fashion changes in Europe cannot be said to have existed', suggests a lack of familiarity with the modes preceding that period, due perhaps to the absence of fashion plates about them, such as have been the author's special source of knowledge. On that subject he is the recognized authority and when he confines himself strictly to comments upon it he is always informative, interesting, and helpful. We wish he had discussed more fully the technique of various artists so that the novice might learn how to identify their work.

The title of the book is misleading. The author limits himself to plates of women's fashions, entirely omitting those of men's, on the very unconvincing plea that these are 'an entirely separate subject'. Why? Did not the same artist often compose fashion plates for both sexes? The omission is the more regrettable as there is a real need, by the student of costume, for illustrations of male fashions of the early nineteenth century.

The book is, of course, a very pleasant one to browse in. The illustrations are well produced, five in colour and 129 in black-and-white. It is a pity that most of the latter are without captions indicating the materials, colours, or nature of the garments displayed; while a few are given, at unnecessary length, their original descriptions. Those from Heideloff's *Gallery of Fashion* have already been reproduced in another volume by the same publisher; one is bound to regret this repetition when others from that source would have been more welcome. A purchaser of the two books may well feel aggrieved.

C. WILLETT CUNNINGTON

## FROM THE JOURNAL OF 1856

VOLUME IV. 18th January, 1856

### QUANTITY *versus* QUALITY

#### *From Home Correspondence.*

SIR,—The result of the proceedings of our iron masters for the last forty years of peace becomes painfully evident when we pass into the state of war. We have not a piece of ordnance, of any size, that can compete for strength with those of our enemy;—many ineffectual attempts have been made both in the Crimea and at home to burst a Russian gun, and it has been found impossible.

However skilfully scientific men may plan, owing to the wretched stuff of which it is cast, an English gun is quite as likely to explode at the breach as to propel the

shot from the muzzle—nor have we been left without some indications of what was to happen; witness the number of cast-iron girders which have broken down of late years without any apparent fault, a disaster that involves the destruction of a certain amount of property and loss of life; but in warfare the bursting of a few guns and mortars may cause the loss of a year, thousands of lives, and millions of money to the nation.

A CIVIL ENGINEER

### Some Activities of Other Societies and Organizations

#### MEETINGS

MON. 23 JAN. Electrical Engineers, Institution of, Savoy Place, W.C.2. 5.30 p.m. E. L. Wihlin: *Particle Accelerators*.

TUES. 24 JAN. British Decorators and Interior Designers, Incorporated Institute of, at the College of Preceptors, 2 & 3 Bloomsbury Square, W.C.1. 6.30 p.m. P. Floud: *The Value of Museums to Designers*.

Manchester Geographical Society, 16 St. Mary's Parsonage, Manchester, 3. 6.30 p.m. G. G. Taylor: *Orkney and Shetland*.

Textile Institute, at the Department of Textile Industries, Leeds University. 7.15 p.m. T. Marchetti: *Contemporary Trends in Carpet Design*.

University of London, at the Bartlett School of Architecture, Gower Street, W.C.1. 5.30 p.m. First of three lectures by R. P. Howgrave-Graham on *Architectural Ornament in the Middle Ages*.

WED. 25 JAN. Mechanical Engineers, Institution of, 1 Birdcage Walk, S.W.1. 6.45 p.m. *Problems in the Erection of Power Stations* (Discussion).

Victoria & Albert Museum, South Kensington, S.W.7. 6.15 p.m. J. B. Bury: *Brazilian Baroque*.

THURS. 26 JAN. Refrigeration, Institute of, at the Institution of Mechanical Engineers, 1 Birdcage Walk, S.W.1. 5.30 p.m. H. I. Andrews: *The Development of a Steam Operated Refrigerator Van*.

FRI. 27 JAN. British Kinematograph Society, at the Lighting Service Bureau, 2 Savoy Hill, W.C.2. 7.45 p.m. Ian Atkins: *Artistic and Technical Considerations in Film and Television Production*.

Engineers and Shipbuilders, North East Coast Institution of, at the Mining Institute, Neville Hall, Newcastle-upon-Tyne. 6.15 p.m. C. E. Iliffe: *Nuclear Reactors for the Generation of Power*.

Mechanical Engineers, Institution of, 1 Birdcage Walk, S.W.1. 5.30 p.m. D. A. Wrangham, R. McCrae and W. K. Rooney: *Three Papers on Sandwich Courses*.

Photographic Society, Royal, 16 Princes Gate, S.W.7. 7 p.m. Denis Segaller: *The Production of Technical Documentary Films*.

SAT. 28 JAN. Horniman Museum, London Road, Forest Hill, S.E.23. 3.30 p.m. E. H. Pinto: *Wooden Bygones*.

MON. 30 JAN. Geographical Society, Royal, South Kensington, S.W.7. 8.30 p.m. Prof. Sir Mortimer Wheeler: *East Africa's Ancient Past*.

Textile Institute, at the Alexandra Cafe, Halifax. 7.30 p.m. C. S. Whenwell: *Finishing of Worsteds*.

TUES. 31 JAN. Electrical Engineers, Institution of, Savoy Place, W.C.2. 5.30 p.m. *The Design and Use of Electrical Measuring Instruments for Arduous Conditions of Service* (Discussion).

Manchester Geographical Society, 16 St. Mary's Parsonage, Manchester, 3. 6.30 p.m. Osmund Hood: *Trip to Majorca*.

Textile Institute, at 10 Blackfriars Street, Manchester, 3. 7 p.m. E. P. Sharman: *The Sizing of Spun Rayon Yarns with Special Reference to Water Soluble Sizes*.

University of London, at the Bartlett School of Architecture, Gower Street, W.C.1. 5.30 p.m. Second of three lectures by R. P. Howgrave-Graham on *Architectural Ornament in the Middle Ages*.

WED. 1 FEB. Archaeological Institute of Great Britain and Ireland, Royal, at the Society of Antiquaries of London, Burlington House, Piccadilly, W.1. 5 p.m. Prof. A. E. Richardson: *The Plan of the Cambridge College Chapel*.

Fuel, Institute of, at the Institution of Civil Engineers, Great George Street, S.W.1. 5.30 p.m. J. L. Gillams: *The Harnessing of Nuclear Power for Industry*.

Photographic Society, Royal, 16 Princes Gate, S.W.7. 7 p.m. Baron: *Baron on Portraiture*.

Victoria & Albert Museum, South Kensington, S.W.7. 6.15 p.m. Donald King: *English Medieval Embroidery*.

THURS. 2 FEB. Chemical Society, at the Royal Institution, Albemarle Street, W.1. 2.30 p.m. and 7.30 p.m. Symposium, Prof. E. A. Braude: *Recent Advances in the Chemistry of Colouring Matters*.

Photographic Society, Royal, 16 Princes Gate, S.W.7. 7 p.m. R. W. G. Hunt: *The Physiology and Psychology of Colour Photography*.

Textile Institute, at the Staff Canteen, Carpet Trades, Ltd., Kidderminster. 7.30 p.m. H. Armitage: *Recent Developments Towards the end use of Nylon Continuous Filament and Staple Fibre*.

SAT. 4 FEB. British Interplanetary Society, at Caxton Hall, Caxton Street, S.W.1. 6 p.m. T. D. Bourdillon: *Portable Breathing Apparatus*.

Horniman Museum, London Road, Forest Hill, S.E.23. 3.30 p.m. Dr. Gwynne Vevers: *Life in the Sea*.

#### OTHER ACTIVITIES

NOW UNTIL 12 FEB. Tate Gallery, Millbank, S.W.1. Exhibition: *Modern Art in the United States*.

NOW UNTIL 29 FEB. Victoria & Albert Museum, South Kensington, S.W.7. Exhibition of *Anglo-Jewish Art and History* (1656-1956).

NOW UNTIL 25 MAR. Imperial Institute, South Kensington, S.W.7. Exhibition: *Nigeria Welcomes the Queen*.

MON. 23 JAN. UNTIL SUN. 29 JAN. Imperial Institute, South Kensington, S.W.7. 12.30 p.m., 1.15 p.m. and 3 p.m. Weekdays. 3 p.m. and 4 p.m. Saturdays. 3 p.m., 4 p.m. and 5 p.m. Sundays. Films: *North and South of the Niger*.

WED. 25 JAN. The Building Centre, 26 Store Street, W.C.1. 12.45 p.m. Film Show: *A Concrete Proposition*.

MON. 30 JAN. UNTIL SUN. 5 FEB. Imperial Institute, South Kensington, S.W.7. 12.30 p.m., 1.15 p.m. and 3 p.m. Weekdays. 3 p.m. and 4 p.m. Saturdays. 3 p.m., 4 p.m. and 5 p.m. Sundays. Films: *Kano—Nigeria*; *Hausa Village—Nigeria*; *Tropical North—Australia*.

WED. 1 FEB. The Building Centre, 26 Store Street, W.C.1. 12.45 p.m. Film Show: *Give Us a Ring*.